

I claim:

*Sub a1* 1. A method for maneuvering a marine vessel, comprising the steps of:

5 providing a first marine propulsion unit which is attachable to a transom of said marine vessel;

providing a second marine propulsion unit which is attachable to said transom of said marine vessel;

receiving a maneuver command from a manually controllable device;

10 calculating a first magnitude of thrust for said first marine propulsion unit as a function of said maneuver command; and

calculating a second magnitude of thrust for said second marine propulsion unit as a function of said maneuver command, said first and second magnitudes of thrust being calculated to create a resultant force vector imposed on said marine vessel and a resultant moment about an instantaneous center of turn of said marine vessel which will achieve said maneuver command.

2. The method of claim 1, further comprising:

15 causing said first marine propulsion unit to provide said first magnitude of thrust; and

causing said second marine propulsion unit to provide said second magnitude of thrust.

3. The method of claim 2, wherein:

25 said causing steps comprise the steps of changing the operating speeds of engines which are associated with said first and second marine propulsion units.

4. The method of claim 2, wherein:

said causing steps comprise the steps of changing the pitch of controllable pitch propellers associated with said first and second marine propulsion units.

5 5. The method of claim 1, further comprising:

changing the relative position of said first marine propulsion unit relative to said transom to change the direction of said first magnitude of thrust relative to said marine vessel; and

changing the relative position of said second marine propulsion unit relative to said transom to change the direction of said second magnitude of thrust relative to said marine vessel.

6. The method of claim 1, wherein:

said first marine propulsion unit is a first outboard motor; and  
said second marine propulsion unit is a second outboard motor.

7. The method of claim 1, wherein:

said first marine propulsion unit is a first sterndrive system; and  
said second marine propulsion unit is a second sterndrive system.

8. The method of claim 1, wherein:

said manually controllable device is a joystick.

9. The method of claim 1, wherein:

said manually controllable device comprises a plurality of push buttons.

10. The method of claim 1, further comprising:

causing said first and second marine propulsion units to be positioned to direct the first and second magnitudes of thrust in a direction perpendicular to said transom.

5 *Sub a2* 11. An apparatus for maneuvering a marine vessel, comprising:

means for providing a first marine propulsion unit which is attachable to a transom of said marine vessel;

means for providing a second marine propulsion unit which is attachable to said transom of said marine vessel;

means for receiving a maneuver command from a manually controllable device;

first means for calculating a first magnitude of thrust for said first marine propulsion unit as a function of said maneuver command; and

second means for calculating a second magnitude of thrust for said second marine propulsion unit as a function of said maneuver command, said first and second magnitudes of thrust being calculated to create a resultant force vector imposed on said marine vessel and a resultant moment about an instantaneous center of turn of said marine vessel which will achieve said maneuver command.

12. The apparatus of claim 11, further comprising:

means for causing said first marine propulsion unit to provide said first magnitude of thrust; and

means for causing said second marine propulsion unit to provide said second magnitude of thrust.

13. The apparatus of claim 11, further comprising:

means for changing the relative position of said first marine propulsion unit relative to said transom to change the direction of said first magnitude of thrust relative to said marine vessel; and

5 means for changing the relative position of said second marine propulsion unit relative to said transom to change the direction of said second magnitude of thrust relative to said marine vessel.

14. The apparatus of claim 11, wherein:

said manually controllable device is a joystick.

15. The apparatus of claim 11, wherein:

said manually controllable device comprises a plurality of push buttons.

16. The apparatus of claim 11, further comprising:

means for causing said first and second marine propulsion units to be positioned to direct said first and second magnitudes of thrust in a direction perpendicular to said transom.

17. The apparatus of claim 11, wherein:

an engine control unit comprises a microprocessor which comprises said first and second calculating means, said receiving means being connected in signal communication with said microprocessor.

18. An apparatus for maneuvering a marine vessel, comprising:

a first marine propulsion unit which is attachable to a transom of said marine vessel;

a second marine propulsion unit which is attachable to said transom of said marine vessel;

a manually controllable device which has an output that is representative of a maneuver command;

first means for calculating a first magnitude of thrust for said first marine propulsion unit as a function of said maneuver command; and

second means for calculating a second magnitude of thrust for said second marine propulsion unit as a function of said maneuver command, said first and second magnitudes of thrust being calculated to create a resultant force vector imposed on said marine vessel and a resultant moment about an instantaneous center of turn of said marine vessel which will achieve said maneuver command.

19. The apparatus of claim 18, further comprising:

means for causing said first marine propulsion unit to provide said first magnitude of thrust; and

means for causing said second marine propulsion unit to provide said second magnitude of thrust.

20. The apparatus of claim 19, further comprising:

means for changing the relative position of said first marine propulsion unit relative to said transom to change the direction of said first magnitude of thrust relative to said marine vessel; and

means for changing the relative position of said second marine propulsion unit relative to said transom to change the direction of said second magnitude of thrust relative to said marine vessel.